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Bull Trout Habitat Restoration: Feather River Culvert Passage Completion Report

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Threatened and Endangered Species Report
Project E-17-1
Section 6, Endangered Species Act

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COMPLETION REPORT

GRANT TITLE: Bull Trout Habitat Restoration: Feather River culvert passage
GRANT NUMBER: E-17
SEGMENT NUMBER: 1
AGREEMENT PERIOD: July 1, 1997-September 30, 2000

PROJECT DESCRIPTION

This project will reestablish passage for bull trout and other migratory fish into the Feather River drainage from the South Fork Boise River. Currently culverts under the main South Fork Boise River road prevent movement up into the Feather River due to excessive outlet drop and culvert velocities. Construction of drop structures below the culvert will raise the outlet pool level and a baffle system in one of the three culverts will reduce velocities allowing access to more than 20 miles of tributary streams above 5,000 ft elevation. Structure construction will occur during low stream flows in winter months.

This project is also one of the recovery measures identified for the South Fork Boise River Watershed by the Southwest Basin Native Fish Watershed Advisory Group.

PROJECT ACCOMPLISHMENTS

During 1999, radio tracking of adfluvial bull trout from Anderson Ranch Reservoir showed that the Featherville Culvert was not a complete block for upriver migrating fish (Partridge et al. 2000) Three radio tagged bull trout ranging from 435 to 505 mm at time of capture were found above the culvert during the summer. Passage likely occurred through the eastern culvert which contained two improperly constructed joints in culvert material which reduced water velocities at the bottom of the culvert. Although some passage is occurring, the project was continued since an encroaching headcut below the culvert would increase the jump for fish into the culvert within a year or two.

During November 1999, three rock drop structures were constructed in the channel below the culvert to stabilize the channel headcut and at high flows, flood the concrete apron below the culvert outfall thereby providing better fish access to the culverts (Photos 1 and 2). Rock for the structures was donated by the Glenns Ferry Highway District. Approximately 115 cu meters of rock was transported 20 km to Featherville from the upper end of Anderson Ranch Reservoir. Rocks and filter fabric were also placed along the west side of the stream between the culverts and the first structure to reduce erosion along the road bed. During construction, willow cuttings were placed under the drop structure rocks at the stream bank and along the rip rap. Soil was placed over the rip rap above the high water line and seeded with a grass and forb mix. Drop structure and rip rap construction was performed by the Idaho Fish and Game Engineering crew. Also in November, 1999, regional personnel placed a fishway (Clancy and Reichmuth 1990) in the western culvert to reduce water velocities (Photo 3). In the fall of 2000, rebar rock supports were added to the fishway cross pieces to help hold both the fishway and rocks in place (Photo 4).

During 2000, spring runoff dislodged a couple of boulders in the furthermost downstream structure. Due to low precipitation during summer months, flows in the Feather River at the culverts ceased allowing repairs to the structure to be made without working in flowing water. These boulders were replaced in the structure and an additional 40 cu. meters of boulders were added to the lower two structures to increase their stability (Photo 5). Additional photos show the structures under springtime flow conditions along with grasses and willows beginning to grow along the disturbed west bank (Photo 6-8).

LITERATURE CITED

Clancy, C. G. and D. R. Reichmuth. 1990. A Detachable Fishway for Steep Culverts. North American Journal of Fisheries Management 10:244-246.

Partridge, F., K. Frank and C. Warren. 2000. Southwest Idaho Bull Trout Restoration (South Fork Boise River) Completion Report. Project E-21-1. Idaho Department of Fish and Game. Boise.

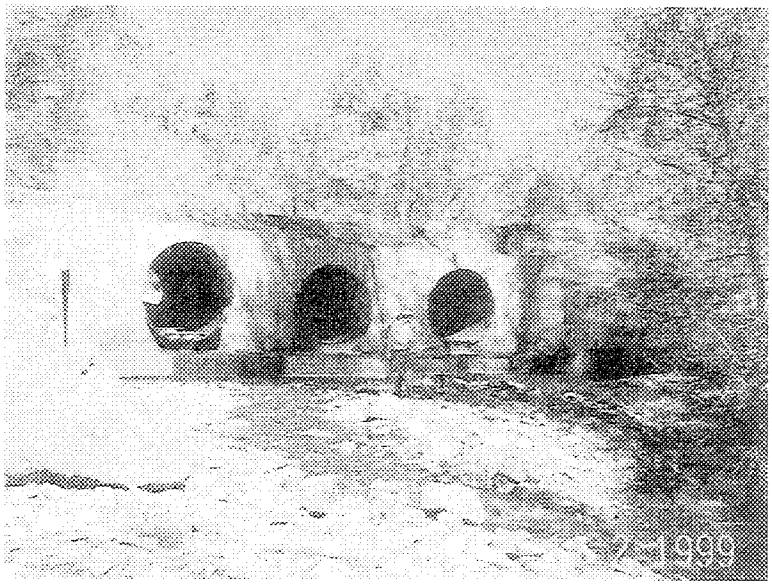

Photo 1. Featherville culverts prior to rock structure construction in November 1999.

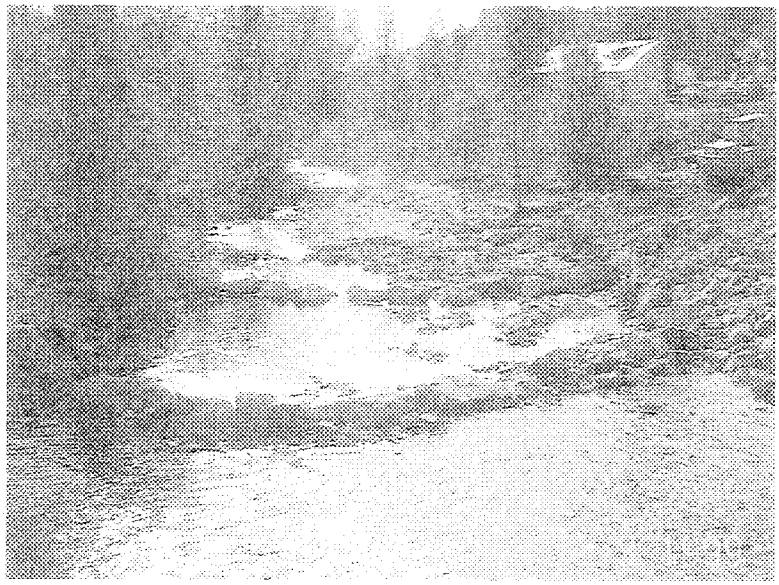

Photo 2. Completed rock structures below Featherville culverts in November 1999.

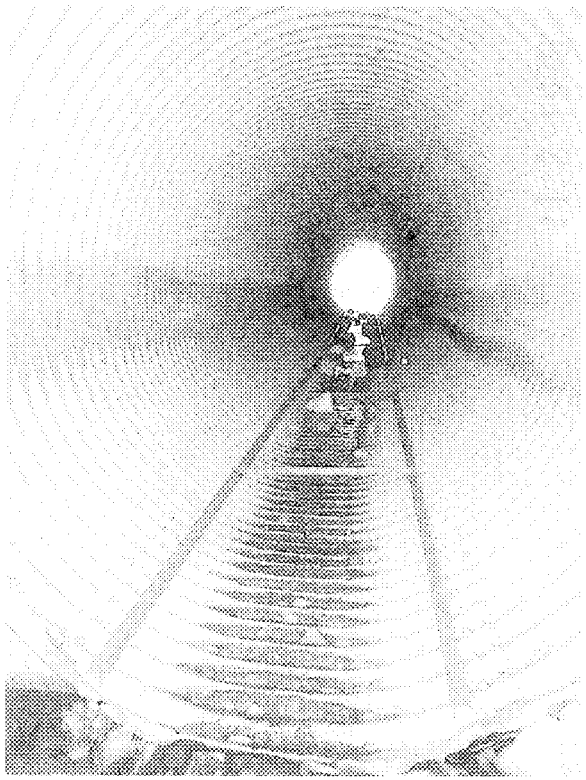

Photo 3. Fishway in west Featherville culvert.

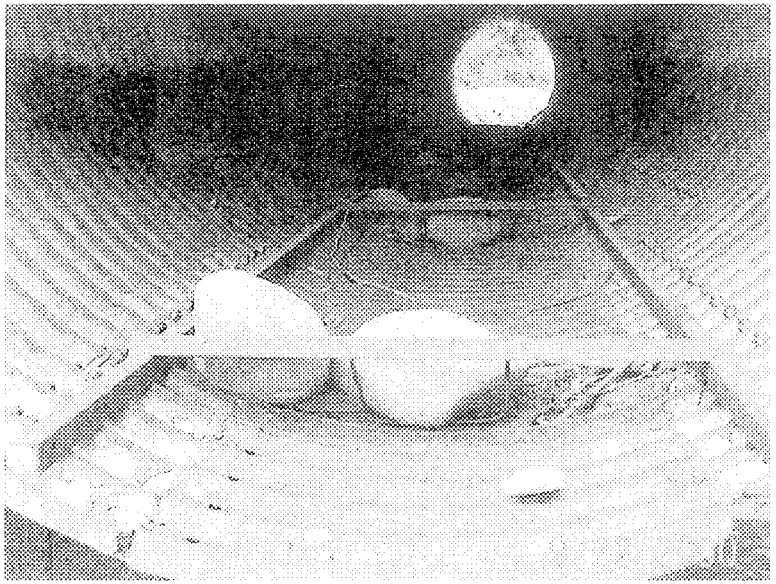

Photo 4. Fishway structure inside the western culvert with added center rock supports.

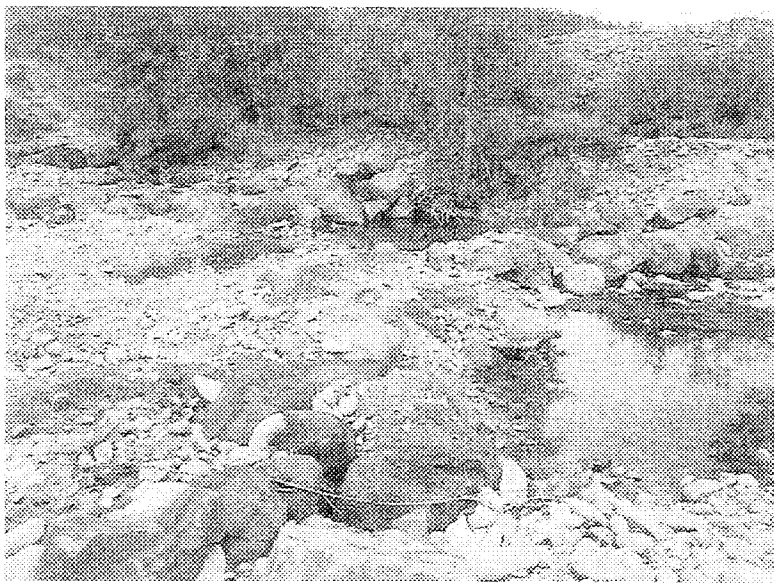

Photo 5. Reconstructed lowermost rock structure at the Featherville Culvert project.

Photo 6. Reseeded west bank with some willow sprouting at end of rock structure.

Photo 7. Reseeded bank vegetation starting to grow along the west side of the Featherville Culvert project, May 4, 2000.

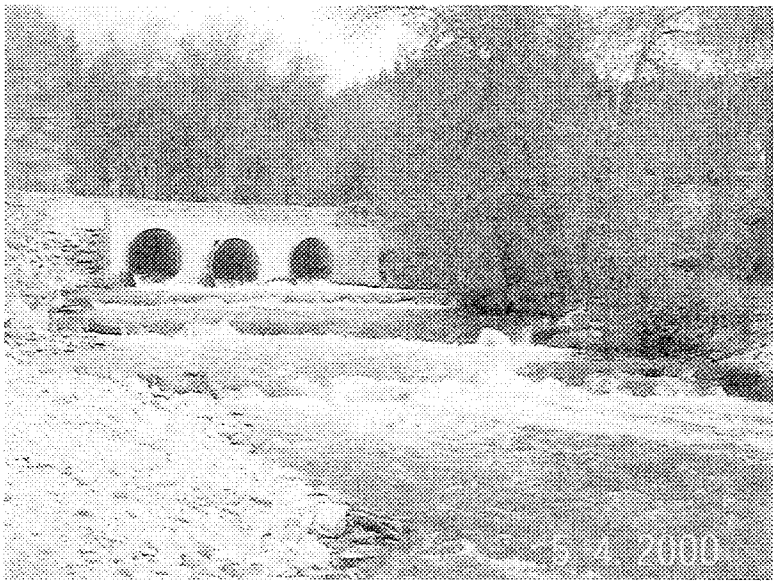

Photo 8. Upstream view from below the Featherville Culverts during moderately low 2000 spring runoff period.

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